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Attorney Docket No.: 0649-1070PUS1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Igarashi et al.

Application No.:

10/530,289

Group Art Unit: 1794

Filing Date:

April 5, 2005

Examiner:

Garrett, Dawn L.

TITLE:

ORGANIC ELECTROLUMINESCENT DEVICE

DECLARATION UNDER 37 C.F.R. § 1.132

- 1. I, Toshihiro Ise, a citizen of Japan, hereby declare and state as follows:
- I received a Doctor's Degree in Chemistry from Tohoku University, Graduate
 School of Science in March 1999.
- I joined Fuji Photo Film Co., Ltd. in April 1999 and have been engaged in the research and development of organic electroluminescence devices since that time.
- I am a co-inventor of the invention disclosed and claimed in the above-identified patent application.
- 5. I am familiar with the contents of the application, its prosecution before the United States Patent & Trademark Office, and the references cited therein. I am particularly familiar with the Office Action dated March 11, 2008 and understand the Examiner's rejections therein.
- I have studied the contents of the cited U.S. Patent Application Publication No. 2002/0125818 to Sato et al. (hereinafter, "Sato '818") and U.S. Patent No. 6,962,755 to Ise et al. (hereinafter, "Ise '755").
- In order to demonstrate the unexpected superiority of the present invention, the following tests were conducted by me or under my supervision.
- 8. The Additional Example 1 is directed to the combination of CBP (hole-transport material), TPBI (electron-transport material) and Ir(ppy)₃ (luminescence material). This combination was made by the Examiner in the outstanding Office Action.

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- 9. The Additional Comparative Examples 1 to 11 are directed to devices where CBP in the Additional Example 1 was replaced with other materials (hole-transport materials) disclosed in Sato '818.
- 10. The Additional Comparative Examples 12 to 15 are directed to devices where TPBI in the Additional Example 1 was replaced with other materials (electrontransport materials) disclosed in Sato '818.
- 11. The Additional Comparative Examples 16 to 23 are directed to devices where CBP in the Additional Example 1 was replaced with other materials (electron-transport materials) disclosed in Sato '818.
- 12. The Additional Comparative Examples 24 to 33 are directed to devices where CBP in the Additional Example 1 was replaced with other materials (holetransport materials) disclosed in Sato '818.
- 13. The Additional Comparative Examples 34 to 36 are directed to devices where CBP in the Additional Example 1 was replaced with other materials (electrontransport materials) disclosed in Sato '818.
- 14. The Additional Comparative Examples 37 to 39 are directed to devices where TPBI in the Additional Example 1 was replaced with other materials (electrontransport materials) disclosed in Sato '818.
- 15. The Additional Comparative Examples 40 to 41 are directed to devices where CBP in the Additional Example 1 was replaced with other materials (electron-transport materials) disclosed in Sato '818 and TPBI in the Additional Example 1 was replaced with other materials (electron-transport materials) disclosed in Sato '818. In other words, both CBP and TPBI were replaced with other electron-transport materials.
- 16. The Additional Comparative Examples 42 to 47 are directed to devices where CBP and TPBI in the Additional Example 1 was replaced with other materials (hole-transport and electron-transport materials) disclosed in Sato '818.
- 17. The Additional Comparative Examples 48 to 50 are directed to devices where TPBI in the Additional Example 1 was replaced with other materials (electron-transport materials) disclosed in Sato '818.

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- 18. For comparison and reference, the results of Additional Example 1, Additional Comparative Examples 1-54, and Example 8 of the present specification are shown in Table I.
- 19. As is apparent from the results shown in Table I, the devices of Additional Comparative Examples 1-54 provide bad performance in operation durability, and many of the devices of the Additional Comparative Examples did not even emit light. In stark contrast, Additional Example 1 and Example 8 of the present invention show superior operation durability and external quantum efficiency.
- 20. The data already of record in the specification and the supplemental data submitted herewith demonstrate superior results of the claimed organic electroluminescent device over those of the cited prior art.
- 21. I hereby declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S. Code 1001 and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

By: Toshihiro Ise Date
Toshihiro Ise

Date: Aug 11, 2008

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			┃	 - - - - -	┡	110/CuPc(10)NPD(50)/80%H-87+10%	the indicated and indicated with the indicated and indicat
		 	 		 	1110/02F6(10)/NFD(50)/80%H-67+10%1FBI+10%Ir[ppy]3[36]/ET-2(FM-1057	ביים ליים ליים ליים ליים ליים ליים ליים
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Ļ	L	L			L	ITO/CuPc(10)/NPD(50)/80%H-56+10%TPBI+10%Ir(ppy)3(36)/ET-2/FM-1057	ITO/CuPc(10)/NPD(50)/80%H-56+10%TPBI+10%Ir(ppy)3(36)/ET-2(FM-1057)
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8	8	8	18	8	8	18 ITO/CuPc(10)/NPD(50)/80%H-50+10%TPBI+10%Ir(ppy)3(36)/ET-2(FM-1057	18 ITO/CuPc(10)/NPD(50)/80%H-50+10%TPBI+10%Ir(ppy)3(36)/ET-2(FM-1057
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6	6	6	6	6	6	18 ITO/CuPc(10)NPD(50)/80%H-40+10%TPBI+10%lr(ppy)3(36)/ET-2(FM-1057	18 ITO/CuPc(10)NPD(50)/80%H-40+10%TPBI+10%lr(ppy)3(36)/ET-2(FM-1057
5	5	5	5	5	5	15 ITO/CuPc(10)/NPD(50)/80%CBP+10%H-23+10%lr(ppy)3(36)/ET-2(FM-1057)	15 ITO/CuPc(10)/NPD(50)/80%CBP+10%H-23+10%lr(ppy)3(36)/ET-2(FM-1057)
4 6	上	上	上	上	上	(TO/C):Pc(10)/NPD/50)/80%CBP+10%H-7-31-10%H(Ppy)3(36)/E1-2(FM-1057)	(TO/C):Pc(10)/NPD/50)/80%CBP+10%H-7-31-10%H(Ppy)3(36)/E1-2(FM-1057)
	┙	┙	┙	┙	┙	170/CuPc(17)VPT/C-T=K86)8/wadal-801+7-H-801+4EB2-808VBJV-T-X48V105VI	170/CuPc(17)VPT/C-T=K86)8/wadal-801+7-H-801+4EB2-808VBJV-T-X48V105VI
(TO/CuPc(10)/NPD(50)/80%CBP+10	(TO/CuPc(10)/NPD(50)/80%CBP+10%H-34+1	ITO/CuPc(10)/NPD(50)80%CBP+10%H-34+10%into	ITO/CuPc(10)/NPD(50)/80%CBP+10%H-34+10%in(ppy)3(36	TO/CuPc(10)\nPD(50)\80%C8P+10%H-34+10%\npp\yi3(36)\E1-2	TO/CuPc(10)/NPD(50)/80%CBP+10%H-34+10%Ir(bpy)3(36)/E1-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%Ir(bpy)3(36)/ET-2(FM-10)/CuPc(10)/NPD(50)/ET-2(FM-10)/CuPc(10)/NPD(50)/ET-2(FM-10)/CuPc(10)/NPD(50)/ET-2(FM-10)/CuPc(10)/NPD(50)/ET-2(FM-10)/CuPc(10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/ET-2(FM-10)/NPD(50)/NPD(50)/ET-2(FM-10)/NPD(5	TO/CuPc(10)/NPD(50)/80%CBP+10%H-34+10%in(ppy)3(36)/ET-2/FM-105/); TO/CuPc(10)/NPD(50)/80%CBP+10%H-4+10%in(ppy)3(36)/ET-2/FM-105/)/3	
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16 P. Additional Comparative Example 42
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Additional Comparative Example 47 Additional Comparative Example 48
Additional Comparative Example 49
Additional Comparative Example 50
Additional Comparative Example 51
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